

71 RF 3251

DIST.		
ETHE, J.C.		
LINGAME, A.H.		
PO, R.D.		
UCHER, D.W.		
IS, J.G.		
RED, J.E.	X	
PERA, D.W.		
RIS, L.R.		
IKOR, F.J.		
NCIS, G.E.		
DOWIN, R.		
LY, T.J.		
KER, E.H.		
S, J.P.		
LE, P.B.		
SH, J.M.	X	
BY, W.A.		
KESO, J.A.		
E.M.		
ESTIC, J.B.		
HEWS, T.A.		
RPENS, B.E.		
GAN, R.V.	X	
TH, P.		
MER, L.A.		
TER, G.L.	X	
UTO, V.M.		
ADES, H.	X	
FEII, B.F.		
NSON, E.R.		
BE, J.S.		
INSON, B.B.		
AMS, R.E.		
CON, J.M.		
NG, E.R.		
E, J.O.		
Arndt	X	
Busby	X	
Ewan	X	
Langman	X	
Porter	X	
Smith	X	
Lindberg	X	
2WM TRACK	X	X
RES CONTROL	X	X
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CLASSIFICATION:		
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CLASSIFIED	X	X
CONFIDENTIAL		
SECRET		

AUTHORIZED CLASSIFIER	
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REPLY TO LTR NO.	

APPROVALS:  
DL: [Signature]  
FE: [Signature]  
G & TYPE INITIALS  
7LAB NRG  
46469 (Rev. 3/91)

## EG&G ROCKY FLATS

EG&G ROCKY FLATS, INC.

ROCKY FLATS PLANT, P.O. BOX 464, GOLDEN, COLORADO 80402-0464 • (303) 966-7000

June 4, 1991

91-RF-3251



000030184

Robert M. Nelson, Jr.  
Manager  
DOE, RFO

Attn: F. R. Lockhart

RESPONSE TO THE ENVIRONMENTAL PROTECTION AGENCY'S (EPA) AND COLORADO DEPARTMENT OF HEALTH'S (CDH) COMMENTS ON THE DRAFT ECOLOGY STANDARD OPERATING PROCEDURES (SOP's) - JMK-0171-91

Enclosed are EG&G's responses to EPA's and CDH's comments received April 1, 1991 on the Draft Ecology SOP's. Transmitted with these written responses are six copies of the revised Final Ecology SOP's. Four of the documents are for DOE's submittal to the regulatory agencies. The Final Ecology SOP's incorporate all EPA/CDH comments as stated in the attachment. Also, as stated in the previous memo of May 21, 1991, DOE and HAZWRAP comments have been incorporated into these Final Ecology SOP's.

Questions concerning the enclosed responses to EPA/CDH comments should be directed to Meredith Brogden in the Environmental Monitoring and Assessment Division (EMAD), extension 5974.

J. M. Kersh, Associate General Manager  
Environmental and Waste Management

MLB:nkg

Orig. and 1 cc - R. M. Nelson, Jr.

Enclosures:  
As Stated

cc:  
Bruce Thatcher - DOE.RFO

DOCUMENT CLASSIFICATION  
REVIEW WAIVER PER  
CLASSIFICATION OFFICE

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4-BW-000325

## Responses to Comments

### EPA Comments

#### General

- Comment: Some SOP's state that field personnel "must" have 40 hr. OSHA training and some SOP's say "should have".
- Response: The Responsibilities and Qualifications section of all the Ecology SOP's will be made consistent to state that "field personnel must have 40 OSHA health and safety training".
- Comment: The SOP's do not discuss what should be done if threatened or endangered species are seen in the field.
- Response: Documentation of special status species will not vary from procedures for documenting other species observed. Species documentation is covered under community survey procedures.

#### Specific

- Comment: Define "flashy nature".
- Response: Flashy nature is a term commonly used by the USGS to mean the occurrence of immediate increases of flow following a rainfall event.
- Comment: 10% formalin solution is adequate for preserving benthic samples
- Response: The use of 10% formalin will be looked at and added as an option if appropriate.
- Comment: A Hess sampler for benthic sampling is preferable over the Surber sampler.
- Response: The SOP states that a Surber sampler "or equivalent" will be used. Therefore, use of a Hess sampler would be allowed.
- Comment: Form 5.0B needs to include filtration efficiency.
- Response: Form 5.0B is the Pond Habitat Description Form. It is unclear what is meant by "filtration efficiency" in relation to this form. No action was taken.
- Comment: The SOP states that fish weight will be done by water displacement. The more common method of using a scale should be considered.
- Response: The SOP was changed to state use of a weighing scale.
- Comment: Methods are not described for ensuring that observations of organisms in distant habitat are identified as in the correct habitat.
- Response: This section has been revised to be more descriptive.
- Comment: Protocols for large mammal sampling were not specified.
- Response: Sampling of large mammals is not planned at this time. If in the future it is deemed necessary, then an additional SOP will be prepared.

Comment: The text gives an area associated with the 50m x 50m grid for small mammal trapping which is inaccurate.  
 Response: The text will be checked and the appropriate corrections made  
 Comment: SOP 5.7 for Birds is unclear.  
 Response: This SOP has been revised.

Comment: SOP 5.8 should include protocols for the capturing amphibians and reptiles.  
 Response: SOP 5.8 lists equipment used for trapping reptiles and amphibians and discusses procedures for doing community surveys. Capturing protocols will be added to include use of the equipment listed.

## CDH Comments

### General

Comment: SOPs for toxicity testing with *Cenodaphnia* and fathead minnows need to be developed.  
 Response: The laboratory used to complete aquatic toxicity tests will be required to meet all EPA guidelines and requirements, and provide EG&G with written SOPs for the testing. At this time a lab has not been selected. It is anticipated that proper certification of the lab will meet the needs of an EPA/CDH approval process.

Comment: SOPs would be enhanced by the addition of lab procedures for sample processing and analyses.  
 Response: All labs on contract with EG&G follow specified protocol and SOPs. It is not appropriate to include this information in the Ecology SOPs.

### Specific

Comment: SOP 5.1 should be expanded to include endpoints and indices sought.  
 Response: Endpoints and indices desired are specified in a Field Sampling Plan (FSP). Collection methods usually are not different even if the samples may be collected for a different reason. Where a collection method or preservation technique varied according to the purpose of the sample these were put into the SOPs so far as they could be anticipated. FSPs are developed following the community survey stage of field investigations.

Comment: The first reference listed in SOP 5.1 needs to call out the more recent 1989 version, 17th edition.  
 Response: Reference to the APHA Standard Methods Manual will be checked to ensure that the 17th edition, 1989 version is referenced and not earlier versions.

Comment: The first and third paragraphs should be combined.  
 Response: Section 6.1 of SOP 5.1, the first and third paragraph seem to be related enough to where the text will be combined for better flow.

Comment: The sentence in SOP 5.1 that states "stream flow velocities will be matched

within 100% of the study site current" needs to be made clearer.

Response: The statement "Stream current velocities should be matched within 100% of the study site current" will be rewritten for clarity.

Comment: SOP 5.1 lists handling requirements for specific analyses for periphyton. The list should include taxonomic composition, community structure, and standing crop. Also, chlorophyll-a samples should consider use of ethanol as the preservative.

Response: These endpoints will be listed with the appropriate handling requirements. Ethanol is being considered.

Comment: How will Total Irradiance be measured? Total phosphorous should also be measured in the field.

Response: Total Irradiance has been dropped from the in-situ parameters. Other water quality parameters to be measured may include total phosphorous can be added as desired through the specific FSP. The Field Sampling Form has space for other data collected in-situ.

Comment: In order to fill out form 5.0A the field personnel must have knowledge of identifying stream habitats. It can not be assumed that personnel will be trained on the SOP before conducting the field work.

Response: It is known that personnel will be properly trained and have the necessary knowledge to implement the SOPs. Training and education with experience are stated requirements.

Comment: Procedures for laboratory processing of macroinvertebrates needs to be included.

Response: Laboratory procedures will be provided by the labs with direction from Rocky Flats. It is not appropriate for the SOP.

Comment: In collecting macroinvertebrates it needs to be clarified if they will be collected based on field identification or lab identification.

Response: Samples will be collected and then subsequently identified taxonomically in the lab.

Comment: Add the following references to SOP 5.2.....

Response: The following references will be added to SOP 5.2: Rapid Bioassessment Protocols for use in Streams and Rivers, Benthic Macroinvertebrates and Fish, U. S. EPA, EPA/444/4-89-001, May 1989, and Methods for Evaluating Stream, Riparian, and Biotic Conditions, U. S. Forest Service, Platts, et. al., 1983.

Comment: Add use of a kick-net to SOP 5.2.

Response: Use of a "kick-net" to SOP 5.2 will be considered and added as an option if appropriate with the necessary discussion.

Comment: How was April-May and September-October selected for sampling benthic macroinvertebrates?  
Response: The SOP 5.2 has been changed to state sampling of benthic macroinvertebrates should be done between April and October. This correlates with the seasonal presence of these species. This information can be found in the references listed in the-SOP.

Comment: The use of 80% solution of ethanol will work equally as well as 10% formalin and will pose less of a hazard and disposal problem.  
Response: 80% ethanol will be considered and put in as an option if applicable.

Comment: Explain whether the sediment sample will be taken before or after the biota samples. Also, explain how the exact spot for taking the sediment sample will be determined in relation to the biota samples.  
Response: SOP 5.2 will be expanded to discuss the relationship between biota samples and sediment samples.

Comment: A kick-net or dip-net should be considered.  
Response: A kick-net or dip-net will be considered and added if appropriate.

Comment: Preservation for tissue samples for SOP 5.2 should be discussed in section 6.4.  
Response: It is mentioned in the SOP that the tissue samples will be kept on Blue ice or Dry ice for up to 4 hours and then frozen and maintained at -20 F.

Comment: The title of the plankton SOP should state zooplankton and phytoplankton.  
Response: Plankton as a single term includes both zoo and phyto-plankton species.

Comment: Copepods need to be added to the plankton SOP.  
Response: Copepods will be added in paragraph 2 of section 2.0 of SOP 5.3.if they are to be sampled.

Comment: SOP 5.3 does not reference the most recent version of Merritt, 1978.  
Response: The more recent version, Merritt,1984 will be referenced.

Comment: The EPA Compendium of Superfund Field Operations needs to specify "Edition".  
Response: Edition will be added.

Comment: Lugols Solution is needed in the equipment list of SOP 5.3.  
Response: Lugols Solution is being considered for the equipment list of SOP 5.3.

Comment: Nutrient levels should be determined as part of the physiochemical properties of water in association with Plankton sampling.  
Response: This will be determined by the FSP where purpose of sampling is explained. If it is decided that it should occur 100% of the time then it will be added

Comment: In sampling phytoplankton for clorophyll-a a closing sampler should be used.  
Response: The use of closing samplers was added as an option.

Comment: Algal samples collected for chlorophyll-a should be filtered as soon as possible but this is not specified in SOP 5.3.  
 Response: The use of a straining bucket is discussed in methods for collection with a tow net.

Comment: SOP 5.4 for Fishes should mention the State Permitting requirements for collecting fish.  
 Response: Permitting requirements will be added.

Comment: Add sechi disc plate to the list of water quality parameters.  
 Response: Turbidity will be measured according to Hach DREL/4 or equivalent method.

Comment: SOP 5.4 could reference the following: Colorado's Little Fish, A guide to the Minnows and Other Lesser Known Fishes in the State of Colorado, John Woodling, Colo. Div. of Wildlife, 1985.  
 Response: These references will be added to the bibliography list.

Comment: Backpack shockers will be more effective. How will fish be collected from deeper ponds?  
 Response: Backpack shockers have been added. Options for collecting fish in deeper ponds was also added.

Comment: Handling of fish needs to be clarified and expanded.  
 Response: The section on handling of fish will be expanded and clarified.

Comment: Is form 5.4A to be filled out for each fish or each site?  
 Response: All field forms have been revised. Tracking information will be completed for each fish while site description information will be done for each site.

Comment: SOP 5.4 needs to specify how fish should be killed. The Sample Handling section mentions collection for tissue sampling and storage in teflon bags but does not mention if they are placed in the bags live or dead.  
 Response: Killing of fish will be specified.

Comment: How will fish age be determined in the field?  
 Response: Fish age will be done in the lab utilizing a scraping of scales.